# MICROBIAL ECOLOGY IN HEALTH AND DISEASE

### **EDITORS**

Dr S P Borriello

Division of Communicable Diseases Clinical Research Centre Watford Road Harrow, Middlesex HA1 3UJ UK

Tel: 081 864 5311

Dr C Russell
Department of (

Department of Oral Medicine University of Manchester Turner Dental School Manchester M15 6FH UK Tel: 061 445 2060

#### **REGIONAL EDITORS**

Dr R J Gibbons Forsyth Dental Center 140 Fenway Boston MA 02115 USA Professor D J Hentges Dept of Microbiology Texas Tech University Health Sciences Center Lubbock Texas 79430 Professor A Lee University of New South Wales PO Box 1 Kensington NSW 2033 Australia

Dr J J Leyden University of Pennsylvania 2 West Gates Building University Hospital 3400 Spruce Street Philadelphia 19104 USA Dr A H Rogers Microbiology Laboratory Dept of Dentistry The University of Adelaide GPO Box 498 Adelaide South Australia 5001

#### **EDITORIAL BOARD**

Dr S D Allen University Hospital Indianapolis USA

Dr S S Arnon California Health Services Berkeley USA

Dr R. J. Carman MRC Dental Research Unit London

Professor S J Challacombe Guy's Hospital London

Professor J W Costerton University of Calgary Calgary

Dr H Donoghue University College London

Dr B S E raser London School of Hygiene and Tropical Medicine London

Dr R Ducluzeau Institut National de la Recherche Agronomique Jouy-en-Josss France

Dr M Eggert University of Alberta Edmonton

Dr S M Finegold VA Wadsworth Medical Center Los Angeles USA Dr R Fuller Food Research Institute Reading LIK

Dr J M Hardie The London Hospital Medical College London UK

Dr J S van der Hoeven University of Nijmegen Nijmegen The Netherlands

Dr M J Hudeon PHLS Centre for Applied Microbiology Salisbury UK

Dr C S Impey AFRC Institute of Food Research Bristol UK

Professor A Linton University of Bristol Bristol UK

Dr D H Lloyd Royal Veterinary College Hatfield LIK

Dr T W MacFarlane Glasgow Dental Hospital & School Glasgow UK

Dr R R Marples Central Public Health Laboratory London

Dr P D Marsh PHLS Centre for Applied Microbiology Salisbury UK

Professor K C Marshall University of New South Wales Kensington Australia Dr P Mastrantonio Istituto Superiore di Sanita Rome

Italy

Dr T Midtvedt

Karolinska Institutet
Stockholm

Sweden

Dr T Mitsuoka
University of Tokyo

University of Tokyo Tokyo Japan

Professor W C Noble Institute of Dermatology London UK

Dr C E Nord National Bacteriological Laboratory Stockholm Sweden

Professor R D Rolfe Texas Tech University Lubbock USA

Dr C R Stokes University of Bristol Bristol UK

Dr D Taylor-Robinson MRC Clinical Research Centre Harrow UK

Dr K Ueno Gifu University School of Medicine Gifu City Japan

Dr G W Welling Rijkuniversiteit Groningen Groningen The Netherlands

Dr C Welts
Laboratory of Medicine & Pathology
Minneapolis
USA

WILEY
Publishers Since 1807

MEHD E6 3 1-338 (1990) ISSN 0891-060X CHICHESTER · NEW YORK · BRISBANE · TORONTO SINGAPORE

Copyright © 1990 John Wiley & Sons Ltd.

## **COPYING OF ARTICLES**

The code and the copyright notice appearing at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients, on the condition that the copier pay for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. The per-copy fee for each article appears after the dollar sign, and is to be paid through the Copyright Clearence Center Inc. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Such permission requests, or other inquiries, should be addressed to the publisher.

Typeset, printed and bound in Great Britain by Henry Ling Ltd., The Dorset Press, Dorchester, Dorset

## CONTENTS

# VOLUME 3, ISSUE Nos. 1-6

# Microbial Ecology in Health and Disease

# ISSUE No. 1 JANUARY-FEBRUARY 1990

Isolation of Newly Described Species of the <i>Bacteroides Fragilis</i> Group from the Faeces of Newborns	
	1
Influence of Orally Administered Antibiotics on Faecal pH and Volatile Fatty Acid Concentrations of Infants and Young Children W. W. Marsh, D. J. Hentges, J. F. Chavarria, W. R. Thal, M. K. Adams, R. Achi and L. Mata	7
	,
Colonisation of Gnotobiotic Piglets by Staphylococcus hyicus and the Development of Exudative Epidermitis  D. H. Lloyd, R. P. Allaker, I. M. Smith and A. Mackie	15
Interaction of Staphylococcus hyicus with Inhibitor-producing Bacteria on the Skin of Gnotobiotic Piglets R. P. Allaker, D. H. Lloyd, I. M. Smith and W. C. Noble	19
Effect of Bile Alcohols on the Microbial 7α-dehydroxylation of Chenodeoxycholic Acid A. Lindqvist, T. Midtvedt, S. Skrede and J. Sjövall	25
The Effect of a Shift from a Mixed to a Lacto-vegetarian Diet on some Intestinal Microflora	
Associated Characteristics T. Midtvedt, G. Johansson, B. Carlstedt-Duke, AC. Midtvedt, K. E. Norin and JA. Gustafsson	33
Usefulness of Equilibrium Parameters of Adhesion in Predicting the Outcome of Competition for Bacterial Receptor Sites on Respiratory Epithelial Cells by <i>Pseudomonas aeruginosa</i> Strains of Heterologous Pilus Type	
R. T. Irvin, P. C. Doig, P. A. Sastry, B. Heller and W. Paranchych	39
ISSUE No. 2 MARCH-APRIL 1990	
Detection of Microecological Phenomena in Filled Teeth I. Phenomena in Gap Between Restoration and Cavity Wall	
G. Buchmann, W. Klimm, A. Gabert and J. Edelmann	51
In Vitro Lymphocyte Stimulation by Simonsiella in Patients with Oral Lichen Planus K. Sananmuang, C. L. Pankhurst, J. J. H. Gilkes, J. M. Hardie and L. Ivanyi	59
Effect of Dietary Phytohaemagglutinin (PHA) on Intestinal Microecology and Bacterial Translocation in Weanling Rats	
C. L. Wells, K. Kouzi-Koliakos, R. P. Jechorek and S. L. Erlandsen.	65
Denture Induced Changes in Palatal Plaque Microflora W. A. Coulter, J. L. Strawbridge and T. Clifford	77
A Study of the Fermentation of Dietary Fibre by Human Colonic Bacteria Grown <i>In Vitro</i> in Semi-continuous Culture	
A. J. Duncan and C. Henderson	87

SHORT COMMUNICATION	
Effect of Preventing Coprophagy on Colonisation by Segmented Filamentous Bacteria in the Small Bowel of Mice	
H. L. B. M. Klaasen, J. P. Koopman, P. M. Scholten, M. E. van den Brink and A. G. M. Theeuwes	99
O.M.I.G. WORKSHOP 1989 — COLONISATION RESISTANCE	
Can the Colonisation Resistance of the Oral Microflora be Enhanced?	
H. D. Donoghue.	I–IV
Can the Colonisation Resistance of the Oral Microflora be Reduced?  J. Bagg	/–viii
ISSUE No. 3 MAY-JUNE 1990	
HYPOTHESIS  How Streptomycin Treatment Compromises Colonisation Resistance Against Enteric	
Pathogens in Mice	
D. J. Hentges, P. Pongpech and J. U. Que.	105
A New Method for the Detection and Enumeration of Xylitol-resistant (Fructose-PTS <sup>-</sup> ) Strains of Streptococcus mutans from Pure Cultures and Human Saliva	
MF. Dréan and L. Trahan	113
The Effects of Potassium Fluoride and Potassium Laurate on pH Gradients in Streptococcus	
downeii M. L. Haves and R. Roden	121
	121
Quantitative Bacteriology of the Seminal Fluid in Health and Disease S. Magnanelli, M. Wilks, T. Boake, S. Tabaqchali and J. A. H. Wass	129
Oral Iron Supplementation and Diarrhoeal Disease in Infants: A Prospective Bacteriological	
Study G. Figueroa, M. Troncoso, H. Galeno and G. Faundez	139
Transferrin Binding by <i>Streptococcus oralis</i> and other Oral Streptococci D. Beighton, R. A. Whiley and K. A. Homer	145
An Intrinsic Pathogenicity Index for Microorganisms Causing Infection in a Neonatal Surgical	
Unit E. M. Leonard, H. K. F. van Saene, C. P. Stoutenbeek, J. Walker and P. K. H. Tam	151
SHORT COMMUNICATION	
Rapid Identification and Enumeration of <i>Clostridium perfringens</i> in the Human Faecal Flora E. Bezirtzoglou and C. Romond	159
XIV International Symposium on Microbial Ecology and Disease	165
ISSUE No. 4 JULY-AUGUST 1990	
Distribution of <i>Streptococcus milleri</i> in the Oral Cavities of Japanese Children T. Yakushiji, K. Kitada, Y. Okita and M. Inoue	171
Immunogold Labelling of <i>Porphyromonas gingivalis</i> in Pure Culture and in Apical Border	
P. Barber, A. Boyd, H. N. Newman, S. J. Challacombe, T. P. Vrahopoulos and S. Gill	181

Inhibition of Staphylococcus hycius and Staphylococcus aureus by Staphylococci of Porcine Origin In Vitro and In Vivo	
L. T. Zaria, W. C. Noble, R. P. Allaker and D. H. Lloyd	193
The Sphincter of Oddi is a Boundary for Bacterial Colonisation in the Feline Biliary Tract J. Y. Sung, M. E. Olson, J. W. C. Leung, M. S. Lundberg and J. W. Costerton	199
The Bacterial Overgrowth Syndrome is Uncommon in Pernicious Anaemia: Results of a Follow-up Study	
R. W. Stockbrügger, U. Armbrecht, J. W. Rode, A. J. Teall, V. G. Oberholzer, J. R. Croker and P. B. Cotton.	209
Isolation and Identification from Subgingival Dental Plaque Samples of Bacteria with Low Susceptibility to Chlorhexidine and Phenoxyethanol M. Wilson, G. Bansal and H. N. Newman	217
Selective Growth Responses of Human Intestinal Bacteria to <i>Araliaceae</i> Extracts YJ. Ahn, MJ. Kim, T. Yamamoto, T. Fujisawa and T. Mitsuoka	223
SHORT COMMUNICATION	
Influence of Dietary Proteins on Production of <i>Clostridium difficile</i> Toxins in Gnotobiotic Mice	
F. Dubos-Ramaré and G. Corthier.	231
ANNOUNCEMENT	235
ISSUE No. 5 SEPTEMBER-OCTOBER 1990	
Interrelationships between Wolinella recta and Streptococcus sanguis in Mixed Continuous Cultures	
H. Ohta, J. C. Gottschal, K. Fukui and K. Kato.	237
Microbial Ecology of <i>Helicobacter pylori</i> in Antral Gastritis and Peptic Ulcer Disease M. Mikelsaar, K. Kolts and HI. Maaroos	245
Serum IgG Antibody Response to Antigens of Presumed Periodontal Pathogens: A Case-	
control Study using ELISA and Western Blot Analysis	251
control Study using ELISA and Western Blot Analysis M. A. Curtis, J. M. Slaney, R. J. Carman, F. H. Harper, J. M. A. Wilton, G. S. Griffiths and N. W. Johnson .	251
control Study using ELISA and Western Blot Analysis	251
control Study using ELISA and Western Blot Analysis M. A. Curtis, J. M. Slaney, R. J. Carman, F. H. Harper, J. M. A. Wilton, G. S. Griffiths and N. W. Johnson . Effect of Dietary Lactitol on the Composition and Metabolic Activity of the Intestinal Micro-	
control Study using ELISA and Western Blot Analysis M. A. Curtis, J. M. Slaney, R. J. Carman, F. H. Harper, J. M. A. Wilton, G. S. Griffiths and N. W. Johnson Effect of Dietary Lactitol on the Composition and Metabolic Activity of the Intestinal Microflora in the Pig and in Humans Y. F. Felix, M. J. Hudson, R. W. Owen, B. Ratcliffe, A. J. H. van Es, J. A. van Velthuijsen and M. J. Hill The Microbial Flora of Saliva and Faeces in Individuals with Selective IgA Deficiency and Common Variable Immunodeficiency	259
control Study using ELISA and Western Blot Analysis M. A. Curtis, J. M. Slaney, R. J. Carman, F. H. Harper, J. M. A. Wilton, G. S. Griffiths and N. W. Johnson Effect of Dietary Lactitol on the Composition and Metabolic Activity of the Intestinal Microflora in the Pig and in Humans Y. F. Felix, M. J. Hudson, R. W. Owen, B. Ratcliffe, A. J. H. van Es, J. A. van Velthuijsen and M. J. Hill The Microbial Flora of Saliva and Faeces in Individuals with Selective IgA Deficiency and Common Variable Immunodeficiency G. Norhagen, PE. Engström, L. Hammarström, C. I. E. Smith and C. E. Nord	259
control Study using ELISA and Western Blot Analysis M. A. Curtis, J. M. Slaney, R. J. Carman, F. H. Harper, J. M. A. Wilton, G. S. Griffiths and N. W. Johnson Effect of Dietary Lactitol on the Composition and Metabolic Activity of the Intestinal Microflora in the Pig and in Humans Y. F. Felix, M. J. Hudson, R. W. Owen, B. Ratcliffe, A. J. H. van Es, J. A. van Velthuijsen and M. J. Hill The Microbial Flora of Saliva and Faeces in Individuals with Selective IgA Deficiency and Common Variable Immunodeficiency G. Norhagen, PE. Engström, L. Hammarström, C. I. E. Smith and C. E. Nord SHORT COMMUNICATIONS	259
control Study using ELISA and Western Blot Analysis M. A. Curtis, J. M. Slaney, R. J. Carman, F. H. Harper, J. M. A. Wilton, G. S. Griffiths and N. W. Johnson Effect of Dietary Lactitol on the Composition and Metabolic Activity of the Intestinal Microflora in the Pig and in Humans Y. F. Felix, M. J. Hudson, R. W. Owen, B. Ratcliffe, A. J. H. van Es, J. A. van Velthuijsen and M. J. Hill The Microbial Flora of Saliva and Faeces in Individuals with Selective IgA Deficiency and Common Variable Immunodeficiency G. Norhagen, PE. Engström, L. Hammarström, C. I. E. Smith and C. E. Nord	259 269
control Study using ELISA and Western Blot Analysis M. A. Curtis, J. M. Slaney, R. J. Carman, F. H. Harper, J. M. A. Wilton, G. S. Griffiths and N. W. Johnson Effect of Dietary Lactitol on the Composition and Metabolic Activity of the Intestinal Microflora in the Pig and in Humans Y. F. Felix, M. J. Hudson, R. W. Owen, B. Ratcliffe, A. J. H. van Es, J. A. van Velthuijsen and M. J. Hill The Microbial Flora of Saliva and Faeces in Individuals with Selective IgA Deficiency and Common Variable Immunodeficiency G. Norhagen, PE. Engström, L. Hammarström, C. I. E. Smith and C. E. Nord SHORT COMMUNICATIONS High Levels of Staphylococci in the Faeces of Breast-fed Babies	259 269

O.M.I.GMINTIG JOINT WORKSHOP 1990—THE MINERAL AND MICROBIAL INTERFACE IN CARIES
Microbial Succession in Relation to Enamel Demineralisation P. D. Marsh
Computer Modelling of Dental Plaque in Relation to Dental Caries G. H. Dibdin
Clinical and Microbiological Problems Associated with Root Caries  D. K. Whittaker
ISSUE No. 6 NOVEMBER-DECEMBER 1990
Effects of Administration of Galactooligosaccharides on the Human Faecal Microflora, Stool Weight and Abdominal Sensation M. Ito, Y. Deguchi, A. Miyamori, K. Matsumoto, H. Kikuchi, K. Matsumoto, Y. Kobayashi, T. Yajima and T. Kan
Effects of Soybean Oligosaccharides on Human Faecal Flora K. Hayakawa, J. Mizutani, K. Wada, T. Masai, I. Yoshihara and T. Mitsuoka
Faecal Excretion of Glycosphingolipids of Breast-fed and Formula-fed Infants G. Larson, P. Falk, L. Hynsjö, AC. Midtvedt and T. Midtvedt
Adhesive Properties of Streptococcus sanguis Isolated from Patients with Behçet's Disease E. Isogai, H. Isogai, N. Fujii, K. Yokata, M. Yamaguchi, K. Oguma, K. Yoshikawa, Y. Sasamoto and S. Ohno 321
Occurrence of Microorganisms in Saliva and Gingival Crevice in HIV-1-infected Patients E. Lucht, A. Teivens, O. Berglund, A. Heimdahl and C. E. Nord
SHORT COMMUNICATION
Effect of Green Tea Extract on Growth of Intestinal Bacteria YJ. Ahn, S. Sakanaka, MJ. Kim, T. Kawamura, T. Fujisawa and T. Mitsuoka
Report of the Third European Oral Microbiology Workshop  J. Bagg and D. F. Kinane
VOLUME CONTENTS
AUTHOR INDEX
KEYWORD INDEX

